The Empire Struck Back: Sanctions and Compensation in the Mexican Oil Expropriation of 1938

ABSTRACT

The Mexican expropriation of 1938 was the first large-scale non-Communist expropriation of foreign-owned natural resource assets. The literature generally makes three assertions: the U.S. government did not fully back the companies, Mexico did not fully compensate them for the value of their assets, and the oil workers benefitted from the change in ownership. This paper musters data and evidence that supports only the first of those assertions, and only to a limited extent: the companies devised political strategies that maneuvered Roosevelt into supporting their interests, and they were more than fully compensated by the Mexican government as a result.

The Mexican petroleum expropriation of 1938 looms large as the apogee of Latin American resource nationalism and America's "Good Neighbor" policy. In Mexico, the expropriation is viewed as a patriotic triumph, in which the federal government seized control of the country's most valuable natural resource. In the U.S., the temperate reaction of the Roosevelt Administration is seen as the decisive break with Washington's imperial relationship towards Latin America. Washington "curbed its finance capital" and downgraded the protection of American overseas private investments.[1]

The only problem with both narratives is that they do not fit the facts. President Lázaro Cárdenas nationalized the oil industry in response to the companies' defiance of a Supreme Court decision in a labor dispute. The U.S. companies went to the mattresses over the dispute because their Mexican assets consisted of high-cost declining fields — they had little to lose. Only the recently-discovered Poza Rica fields showed promise, and they were in the hands of a British company. The U.S. companies, therefore, were willing to gamble in order to send a signal to labor unions in other jurisdictions — like Venezuela — that they were not to be trifled

[1] Wood, *Good Neighbor Policy*, pp. 344 and 360.

with. After the nationalization, FDR, no friend of the oil men, employed sanctions to defend the companies in response to political pressures. The oil companies held out for the best possible deal until 1941, when Washington imposed a resolution that fully compensated the companies for the market value of their assets. The British-owned Mexican Eagle Oil Company fared even better than the U.S. firms.

The paper proceeds as follows. First, it presents evidence that the Mexican oil industry was in decline by the 1930s. Second, it shows that the American companies were in financial distress during the same period. Third, it presents evidence that the U.S. companies resisted labor demands in 1938 because they could not afford to pay them, which resulted in the expropriation. Fourth, it demonstrates that the U.S. used sanctions to force Mexico to compensate — in fact, *overcompensate* — U.S. companies. Finally, it shows that the expropriation did not increase the Mexican government's petroleum revenues or the wages paid to Mexican oil workers.

The Decline of the Mexican Oil Industry

Mexican oil production declined monotonically between 1921 and 1933. The decline in output was not due to declines in investment or exploration. Under every available measure, investment peaked *after* output peaked. This is not consistent with the hypothesis that the companies cut back on investment from fear of future taxes or expropriation. It does, however, square with contemporary accounts of the invasion of Mexico's oil deposits by salt water. It took only a few years for the sheets of salt water that lay beneath them to invade the petroleum.[2]

FIGURE 1 AROUND HERE

[2] Hall, *Oil, Banks, and Politics*, pp. 105, 109, 111; Brown, *Oil and Revolution*, pp. 143 and 164.

The oil companies kept searching for oil. They simply could not find enough to maintain production. Exploration increased until 1926, but fewer new wells found oil. (See Table 1.) Even when the companies sank successful wells, the initial output per well dropped. At its peak in 1921, the average initial capacity of a new well was 3.7 million barrels per day (bpd). By 1924, it had fallen to 1.0 million bpd. By 1930, the average new well produced only 61,327 bpd. The combination resulted in, as one observer put it, "a very pronounced increase in the cost of obtaining a barrel of crude oil."[3]

TABLE 1 AROUND HERE

The one exception to the lack of new discoveries was the Poza Rica fields controlled by the Mexican Eagle Oil Company. Mexican Eagle discovered oil in the region in 1930. Production started in 1932, but ran into a series of related problems. First, the cost of production was higher than in the company's previous fields. Second, the company needed to construct new pipelines for the fields to be viable. Third, 41% of the fields were located on federally-owned lands.[4] Fourth, labor troubles and a commercial conflict with a small Mexican company complicated development. A final arrangement wasn't reached with the federal government until May 1937: Mexican Eagle gained the right to exploit federal lands in return for a 35% royalty.[5]

Data on net investment levels follow the same pattern as the data on new wells. The financial statements of the major Mexican oil companies can be found in *Moody's Manual of Invest-*

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[3] Sterret and Davis, *Economic Condition*, p. 204.

[4] El Águila owned only 7,700 the field's 13,000 proven acres. "Business: Poza Rica," *Time Magazine*, Nov. 22, 1937.

[5] Since the royalty was paid in barrels of oil, the agreement was more akin to a modern production-sharing agreement than a true royalty. The federal share declined to 15% for low-quality crudes. See Cabrera, *La Suprema Corte*, pp. 64-65. The agreement did not go into effect until November 1937. "Business & Finance: Mexican Wages," *Time Magazine*, December 27, 1937.

ments, including the Mexican Petroleum Company, Mexican Eagle, the Mexico-Pánuco Oil Company, the Mexico Seaboard Oil Company, and the Penn-Mex Fuel Company. These firms accounted for 76 percent of total output in 1918.[6] Table 2 presents an index of the nominal value of each firm's fixed assets, that is to say, their assets *excluding* cash, securities, loans to other firms, accounts receivable, and other liquid investments.[7]

TABLE 2 AROUND HERE

By 1931, every company in the sample was disinvesting. Mexican Petroleum's investment peaked in 1924. Mexican Seaboard peaked in 1925, Mexico-Pánuco and Penn-Mex in 1930, and Mexican Eagle in 1931. in May 1932, Penn-Mex announced that it was shutting down its operations in Alvarez, Barra Sur de Tuxpan, and Veracruz, due to "diminishing production of the company's wells."[8] The data in Table 2 are consistent with the estimates made by the Mexican government of total investment in the oil industry, which indicate a rapid run-up from 1912 to 1924, followed by an accelerating decline through 1936. (See Table 3.)

TABLE 3 AROUND HERE

Since Mexico produced no drilling equipment, pipes, casings, or tanks, gross investment flows can be measured by the real value of oil equipment imported from the United States.

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[6] Market shares were calculated from data in Brown, *Oil and Revolution*, p. 125.

[7] We look at fixed assets (land, equipment, buildings) not total assets. The reason is that total assets can increase through the purchase of securities or increases in cash balances, without these assets being invested in productive apparatus. In fact, total assets can increase if a firm is selling its productive assets and holding the proceeds as cash. Our figures are the book values of fixed assets, calculated at acquisition cost minus depreciation. Optimally, we would have converted these figures into replacement costs. This involves applying the same depreciation schedules across companies by asset type and adjusting the value of new acquisitions of productive apparatus for inflation. Unfortunately, many financial statements either lumped depreciation in with other expenses or failed to break down productive assets into sufficiently detailed sub-categories.

[8] "Penn Mex Cuts Operations," *Wall Street Journal*, May 5, 1932.

Figure 2 presents the data. Investment flows began to decline in 1925.[9] They then fell through 1938, save for a brief uptick in 1932-34 as the Poza Rica fields came on-line.

FIGURE 2 AROUND HERE

The State of the Oil Companies

Three traded companies — Mexican Eagle, Mexican Petroleum, and Penn-Mex — produced all their oil in Mexico. A fourth, Mexican Seaboard, produced 62% of its oil in Mexico in 1930, although this number fell to 20% by 1937.[10] In 1919, Royal Dutch-Shell purchased a controlling interest in Mexican Eagle.[11] In 1932, Standard Oil of New Jersey (now ExxonMobil) acquired Mexican Petroleum.[12] The four companies represented 78% of Mexican production in 1937.

TABLE 4 AROUND HERE

The implication of declining production and rising costs is that the Mexican oil industry should have been in increasing financial distress. The financial data bear out this implication. Share prices went into a sustained decline during the 1920s and '30s. Mexican Eagle shares declined 89% (in real terms) between 1920 and 1930. They briefly rallied when Poza Rica came on line, but then declined again. Mexican Seaboard shares also fell, collapsing by half in 1922 and then losing almost all their value between 1925 and 1931 before recovering somewhat. The recovery, however, coincided with a decline in Mexico's share of the company's production from

[9] This is not the same thing as saying that the stock of investment declined. As long as new investment flows exceeded the depreciation of old equipment and the re-export of used equipment from Mexico to third countries, the stock of investment would have increased. Without estimates of re-exports of petroleum equipment and estimates or the rate at which equipment depreciated, it is not possible to estimate the stock of investment. It is unlikely, however, that re-exports and depreciation would have exceeded new flows, at least through the late 1920s.
[10] *Moody's Manual of Investment*, 1938, pp. 792-794.
[11] Rippy, *Mexican Revolution*, p. 154.
[12] Meyer, *Mexico*, p. 4.; Brown, *Oil and Revolution*, p. 45; "Mexican Petroleum offer may be made," *Wall Street Journal*, 6/16/1927.

57% in 1931 to 20% in 1937.[13] Penn-Mex shares collapsed due to a 1932 decision to liquidate most of the enterprise. South Penn Oil (which owned 55% of Penn-Mex) arranged to swap the company's existing stock, with a par value of $25, for new shares with a par value of $1. It then authorized Penn-Mex's directors to "pay dividends out of any available funds … regardless of whether or not the excess was created through net earnings."[14] The directors immediately paid a special dividend of $5.18. Four days later, South Penn sold its remaining stake in the company to Sinclair for $1 per share plus an additional $18.75 to be paid out over time.[15]

Mexican Petroleum's share price was rescued from oblivion by negotiations by Jersey Standard and Standard Oil of Indiana (later Amoco) over the latter's overseas assets. Standard of Indiana owned 97.3% of the shares of the Pan-American Petroleum and Transport Company, which in turn owned 96% of Mexican Petroleum. Mexican Petroleum made up 21% of Pan-American's assets, by market value, the rest of which were located in Venezuela and Aruba. In April 1932, with the U.S. Congress debating oil import tariffs, Standard of Indiana agreed to sell Pan-American to Jersey Standard. (Jersey Standard possessed a widespread distribution network in South America and Europe, and thus could easily divert production to those markets.)[16] In 1935, Jersey Standard decided to buy up the remainder of Mexican Petroleum shares at their par value and delist the stock.[17] The price, unsurprisingly, rose to the par value of $100 before disappearing. Data from the companies' financial statements bears out the verdict of the market.

[13] *Moody's Manual of Investments*, various issues.
[14] "Penn Mex Cash Aids South Penn," *The Wall Street Journal*, 3 October 1932, p. 5.
[15] "Consolidated Oil in Deal in Mexico," *The New York Times*, 5 October 1932, and "Acquires Penn Mex Fuel," *The Wall Street Journal*, 6 October 1932, p. 2. The smaller company paid dividends of 50¢ in 1932; 75¢ in 1933, 1934, and 1935; 50¢ in 1936; and 30¢ in 1937. *Moody's Manual of Investments*, various issues.
[16] "S.O. N.J. Acquiring Foreign Properties," *Wall Street Journal*; Apr 20, 1932
[17] "Mexican Petroleum And Utah Copper To Leave Exchange," *Wall Street Journal*, 1935 (Jul 12).

Mexican Eagle's return on assets declined from 9% in 1921 to nil by 1928, and remained low until Poza Rica boosted it back to 7%. Mexican Petroleum steadily lost money over the 1930s.[18]

TABLE 5 AROUND HERE

Did the Mexican government contribute to the oil companies' parlous state? The answer appears to be no. First, as discussed above, the oil companies continued to prospect for oil during the 1920s and 1930s. When they found it, as in Poza Rica, they invested. Second, share prices of *all* oil companies, not just those exclusively operating in Mexico, fell with the price of oil, which dropped from $26.10 per barrel in 1920 (in 2009 dollars) to $11.92 in 1932. (See Figure 3.)

Might the Mexican government have engaged in creeping expropriation via the tax system? Petroleum taxes as a percentage of the gross value of crude production rose from 15% in 1925 to more than 30% by 1931. By the 1930s, however, production charges, export duties, royalties, and income taxes made up less than a *third* of oil taxes. The rest came from oil import duties and excises on domestic sales of refined products, overwhelmingly gasoline. The burden of import duties, obviously, did not fall on Mexican oil producers. Gasoline excises might have fallen on producers, but for two factors. First, such charges came out of the value-added during the refining process, not the value of the crude. Second, if a foreign-owned Mexican refinery could not pass along the burden of excise taxes, it would simply choose to export. In fact, most of Mexico's refined production was exported. (See Figure 5.) The maximum burden of refined product taxes was therefore equal to the cost of exporting refined products to the U.S., plus (after 1932) tariffs. A Congressional report estimated the 1931 transport cost to be $3.78 (in 2009

[18] Calculated from data in Moody's Manual of Investments and *Mexico's Oil*, p. 141.

dollars) per barrel.[19] Figure 4 presents an estimate of the oil taxes falling on crude producers; despite the imposition of U.S. tariffs in 1932, the burden fell continuously after 1922.[20]

FIGURE 3 AND FIGURE 4 AROUND HERE

The Labor Disputes

The parlous state of oil company finances was on collision course with the increasing militancy of the oil unions. Strikes hit the Mexican Eagle refineries in Tampico in Minatitlán in April 1915, followed by a second set in 1916 and 1917. In May 1917 the labor unrest spread to Pierce's operations in Tampico and Mexican Petroleum's refinery in Mata Redonda.[21] The government of the state of Tamaulipas stepped in and settled the Pierce strike, mandating a 25% wage increase.[22] In June, Mexican Petroleum conceded the same benefits.[23] Mexican Eagle gave in to a 1924 strike, conceding an 8-hour workday, wage hikes, and the first collective bargaining agreement in the history of the Mexican industry.[24] The other companies soon signed similar contracts.[25] Mexican Eagle ended a 1925 strike by paying $123,000 to the union leadership.[26] Nominal wage rates rose from 6¢ (U.S.) per hour in 1913 to 16¢ per hour in 1934. In that year, Mex-

[19] 28¢ nominal. Data from U.S. House of Representatives, 'Production Costs of Crude Petroleum and of Refined Petroleum Products', House Document No. 195, 72nd Congress, 1st Session (Washington: GPO, 1932), p.49.

[20] On June 6, 1932, Congress imposed tariffs of 21¢ per barrel on crude oil, $1.05 per barrel on gasoline, and $1.68 per barrel on lubricants. McBeth, "Oil Industry," pp. 427-462.

[21] Brown, "Sindicalización," p. 39.

[22] Warren to H.C. Pierce, 5/8/17, National Archives, Record Group 59, 812.504/97.

[23] McHenry to Secretary of State, 6/17/1917, National Archives, Record Group 59, 812.504/110.

[24] Dawson to Secretary of State, 4/20/24, National Archives, Record Group 84, Tampico post records, 850.4.

[25] Dawson to Secretary of State, 4/20/24, National Archives, Record Group 84, Tampico post records, 850.4.

[26] "Conflicto: La Compañía Petrolera El Águila y sus empleados, 1925-26," AGN Depto. de Trabajo, box 772, file 1.

ican Eagle faced a second wave of disputes.[27] More strikes broke out against Mexican Petroleum in January 1935. The company preferred to close its facilities "rather than compromise with the workers."[28] Peace lasted until November 3, 1936, when the Sindicato de Trabajadores Petroleros de la República Mexicana (STPRM) demanded an $8.3 million wage hike, 18 paid holidays, 20 to 60 days paid vacation, health insurance, 25 days of severance pay for each year of service in the case of voluntary separation, 90 days of severance in the case of involuntary separation, and control over all hiring decisions, save for 110 positions across the entire *industry*.[29] (See Table 6.)

TABLE 6 AROUND HERE

The oil companies did not react well. Their representatives wrote, "The union draft contains over 250 clauses, covers 165 pages of legal-size script of which almost 40 embrace the wage schedule and took several months to formulate, and yet the companies were to 'discuss' and 'approve' the document in the peremptory period of 10 days." Moreover, they refused to give up control over hiring and firing. "Owing to the present restricted number of supervisory positions, the industry is already suffering the consequences of lack of control and discipline."[30]

President Cárdenas intervened to contain the dispute by appointing a special commission. On August 14, 1937, the commission reported that the companies could afford a wage increase of $7.3 million. A wildcat strike immediately broke out at Poza Rica.[31] Cárdenas ordered it stopped.[32] A second wildcat hit Mexican Eagle in September. An exasperated Cárdenas accused

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[27] J. Rennow to Luis Rodríguez, 12/15/34, AGN Fondo Lázaro Cárdenas, Box 432, File 1.
[28] R. Henry Norweb to Secretary of State, 6/29/34, National Archives, Record Group 59, 812.45/212.
[29] "Proyecto aprobado en la primera Gran Convención Extraordinaria del Sindicato de Trabajadores Petroleros de la República Mexicana," AGN, Archivo Histórico de Hacienda, C1857-117.
[30] Brown, "Labor and State," p. 19.
[31] James Steward to Secretary of State, 8/17/37, National Archives, Record Group 59, 812.00 – Tamaulipas/307.
[32] Pierre de Boal to Secretary of State, 8/10/37, National Archives, Record Group 59, 812.45/495.

the workers of helping "capitalist interests" by turning the country against the labor movement.[33] The strike ended when the company agreed to pay the workers 75% of lost wages and gave the union leadership $6,944.[34] On March 2, 1938, the Federal Labor Board announced that it would grant the unions a $7.3 million wage hike and increased control over personnel decisions. The Supreme Court upheld the decision the next day.

Mexican Petroleum reacted by closing 23 wells, moving oil stored in the fields to Tampico (presumably for quick export), shutting down the Mata Redonda plant and sending a letter to every employee stating that it would be unable to comply with the Board's order.[35] The STPRM called for a national strike. The March 7 deadline fixed by the Federal Labor Board came and went. On March 14, the Labor Board warned that they needed a response from the company by the following day. On March 15, the companies reported that they could not comply. The Board responded by suspending all contracts.[36] With their pay suspended, and a strike deadline looming, workers began to seize loading terminals and shut down pipelines.

President Cárdenas faced the imminent collapse of Mexico's most important industry.[37] On March 18, 1938, he announced the nationalization. "Under such conditions, it is urgent that the public authorities take adequate measures to prevent grave domestic disturbances due to the paralysis of transportation and industry, which would make it impossible to satisfy collective needs and supply the consumer goods needed by our population centers."[38]

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[33] Brown, "Labor and State," p. 26.
[34] Jack Neal to Secretary of State, 9/30/37, National Archives, Record Group 59, 812.00 – Tamaulipas/320.
[35] Brown, "Labor and State," p. 24.
[36] Gordon, *Expropriation*, p. 117.
[37] Brown, "Labor and State," p. 27.
[38] Cárdenas, *Decreto*. Author's translation.

Could the companies have paid higher wages? Table 6 presents two estimates of the annual cost of the settlement: one from the Federal Labor Board and one from oil company accountants. According to company figures (taken from annual reports for Mexican Eagle, Mexican Petroleum, and Penn-Mex, and figures compiled by Mexican officials from company accounts for the remainder) the oil companies earned $3.7 million in 1936. Eliminating depreciation and depletion implies a net cash flow of $7.0 million, less than the *official* estimate of the settlement.

The Mexican government accused the companies of transfer pricing, and declared their profits at $15.4 million. Mexican Eagle, however, accounted for almost all of the difference between the companies' reported profits and the government's estimate. Even for Mexican Eagle, however, the lowest estimate of the burden is 31% (using government figures) and the highest 102% (using the company's). Even the low figure would have been a substantial hit to the company's bottom line … and the high figure would have put it into the red.

TABLE 7 AND TABLE 8 AROUND HERE

The companies had additional reasons to go to the mattresses. First, they did not want to lose the ability to hire and fire. Second, many companies had profitable assets in other countries. They wanted to set a precedent that would discourage other countries from attempting to alter oil concessions. This was not an abstract fear. In 1927, Spain nationalized Jersey Standard's properties.[39] In 1931, Uruguay established a state-owned oil refining and retailing company that drove down the private share of the market from 100% to 50.2% by 1937.[40] In 1932, the Chilean government threatened expropriation, which was headed off only by a well-timed military

[39] Bucheli, "Energy Politics," p. 357.
[40] Philip, *Oil and Politics*, p. 192.

coup.[41] In March 1937, Bolivia nationalized Jersey Standard's concessions.[42] In short, the oil companies took a risk in order to maintain a reputation. For them, it was a good bet. First, the assets they gambled with were relatively low value. Second, the union demand was unaffordable.[43] Third, they figured (correctly) that the U.S. government would protect their interests.[44]

Failed private sanctions

The oil companies tried to mobilize public opinion on their behalf. The U.S. ambassador to Mexico, Josephus Daniels, complained that the companies "started to build propaganda fires under the government to compel a return of the properties."[45] Editorial cartoons distributed by Jersey Standard portrayed the expropriation as a direct assault on American interests.[46] The companies also resorted to selective leaking, in order to tie the U.S. government's hands.[47] Moreover, the companies' propaganda highlighted terrorist incidents and called for American tourists to stay away from Mexico. In 1938, Mexico's tourism receipts dropped by a third.[48] Tourism was not yet a major part of the Mexican economy, however, and polling data indicated that Americans cared little about the expropriation.[49]

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[41] Philip, *Oil and Politics*, p. 185.
[42] Philip, *Oil and Politics*, p. 197.
[43] In early 1938, the companies offered a $6.5 million wage hike as long as they could retain complete control over staffing. The unions realized that the implication of the compromise would be large-scale layoffs. Brown, "Labor and State," pp. 26-27.
[44] Brown, "Labor and State," pp. 27-28.
[45] Daniels, *Diplomat*, p. 231.
[46] Huesca, "Propaganda War," p. 3.
[47] For example, on March 28, 1938, Secretary of State Hull delivered a private note requesting "fair, assured and effective compensation." The key phrase appeared in the next day's papers, where Hull's demand was described as "forceful." Huesca, "Propaganda War," p. 21.
[48] Meyer, *Mexico*, p. 204.
[49] Huesca, "Propaganda War," p. 23.

Second, the oil companies tried to interfere with Mexico's oil exports. The U.K. officially boycotted Mexican oil. (Mexico provided only 2.1% of British imports in 1938.[50]) The courts, however, blocked attempts to extend the boycott. A U.S. federal district court dismissed a case accusing the Eastern States Petroleum Company of importing $1.7 million worth of oil claimed by Mexican Eagle, based on the doctrine of sovereign immunity. Belgian and Dutch courts decided similarly. In France, Mexican Eagle won a lower court decision, but an appellate court overturned it and forced *the company* to pay damages to distributors who had been unable to take possession of their oil for ten months. A state court in Alabama went so far as to block attempts to stop the Mexican consul from taking possession of expropriated oil tankers.[51] Once it became clear that the courts would not enforce the sanctions, American middlemen began to arrange barter deals with Germany and Italy.[52] More importantly, with internal demand skyrocketing, Pemex succeeded in re-orienting itself around the domestic market.[53]

FIGURE 5 AROUND HERE

Successful public sanctions

The oil companies needed the support of the U.S. government in order to threaten Mexico. The rub was that FDR's Good Neighbor Policy eschewed intervention, and Washington had many reasons to avoid sanctioning Mexico. Interior Secretary Harold Ickes wrote, "If bad feelings should result in Central and South America as a result of the oil situation that exists just

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[50] McBeth, *British Oil Policy*, p. 127.
[51] *Memoria de la Secretaria de Relaciones Exteriores, Septiember de 1938-Agosto de 1939, Tomo I*, pp. 83, 93-94, 114-19, 135-139, 148.
[52] Powell, *Mexican Petroleum*, p. 113.
[53] Powell, *Mexican Petroleum*, p. 116.

now with Mexico, it would be more expensive for us that the cost of all the oil in Mexico."[54] Moreover, Ickes feared that sanctions could cause the Mexican government to collapse.[55] Josephus Daniels, the U.S. ambassador to Mexico, shared Ickes's concerns.[56] Treasury Secretary Henry Morgenthau worried that economic instability in Mexico might push the Mexican government into allying with the Axis or turn towards Communism.[57]

The companies therefore designed a political strategy to maneuver Washington into sanctions. They crafted on in conjunction with Secretary of State Cordell Hull. [58] Hull was angry about a Mexican decision to increase tariffs and easily persuaded of "the need to punish Mexico economically to gain its respect for American business before closer economic ties with the country could be achieved."[59] On March 26, 1938, he sent a note to Mexico that denounced expropriation without compensation. He then convinced Morgenthau to suspend treasury purchases of Mexican silver and reduce support price from 45¢ to 43¢ an ounce. This was a blow: in 1936, the Mexican government earned 24% of its total revenues from silver, twice what it earned from oil taxes.[60] Hull convinced Morgenthau that the expropriation was a convenient excuse to suspend the Silver Purchase Act of 1934.[61] In addition, at the time of the expropriation, the Fair

[54] Ickes, *Secret Diary*, p. 352.
[55] Ickes, *Secret Diary*, p. 521.
[56] Daniels to Roosevelt, 8/31/38, Josephus Daniels Papers #203, Southern Historical Collection, The Wilson Library, UNC- Chapel Hill.
[57] Jayne, *Oil*, p. 48.
[58] Huesca, "Propaganda War," p. 24.
[59] Jayne, *Oil*, p. 44.
[60] Nominal Mexican government income from silver sales of $30.5 million from Jayne, *Oil*, p. 48. Total government income calculated from figures in Uhthoff, "Fiscalidad y Petróleo," Table 5.
[61] Harry Dexter White also wanted to suspect the Silver Purchase Act. The Silver Purchase Act committed the Treasury to buying a fixed quantity of silver every year until silver stocks reached 25% of its total specie reserves or the silver price reached $1.29 an ounce. (In 1936, the U.S. began to purchase silver directly from the Mexican government.) Morgenthau was initially ambivalent about the Silver Purchase Act, be-

Labor Standards Act was bottled up in committee. FDR could hold out a promise to re-institute price supports for *domestic* silver as a way to keep recalcitrant Nevadan legislators inside the New Deal coalition.[62] Morgenthau was hesitant to explicitly commit FDR, so he sent a letter to the President while he was on vacation in Warm Springs, New York, stating simply that he would interpret a lack of communication as consent.[63]

Hull's strategy kept the pressure on both the Roosevelt Administration (to punish Mexico) and the Mexican government (to compensate the companies). Hull had served in Congress with Samuel McReynolds (D-TN), the chairman of the House Foreign Affairs Committee, and both had been judges back in Tennessee.[64] In January 1939, McReynolds introduced a bill calling for an end to silver purchases which subsidized Mexico's economy.[65] Other congressmen, notably Martin Kennedy (D-NY) and Hamilton Fish (R-NY) also introduced anti-Mexico resolutions. Hull insured that the bills would not pass, since they would interfere with the negotiations between the Mexican government and the companies, but they served as a useful cudgel.[66] In

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cause it allowed the Treasury to build up specie reserves that it could use to counteract Federal Reserve policy, but the concurrent Gold Stabilization Act of 1934 provided ample resources for his purposes. Conversation with Taylor and Lochhead, 3/28/38, Morgenthau Diary #117, *Presidential Diaries of Henry Morgenthau, Jr. 1938-1945*, Lamont Library, Harvard University. Morgenthau's most famous statement about the power the Gold Stabilization Act gave him went as follows: "The way the Federal Reserve Board is set up now they can suggest but have very little power to enforce their will…The Treasury's+ power has been the Stabilization Fund plus the many other funds that I have at my disposal and this power has kept the open market committee in line and afraid of me." Blum, *Diaries*, p. 352.

[62] Morgenthau believed that Senator Key Pittman, the author of the Silver Purchase Act of 1934, cared only about the domestic industry. Conversation with Taylor and Lochhead, 3/28/38, Morgenthau Diary #117, *Presidential Diaries of Henry Morgenthau, Jr. 1938-1945*, Lamont Library, Harvard University.

[63] Jayne, *Oil*, p. 49.

[64] Jayne, *Oil*, p 109.

[65] Samuel McReynolds, *Senate Resolution 72*, 76th Congress, 1st Session, February 1, 1939.

[66] Frank Kluckhohn, "House Rules Out Inquiry on Mexico," *New York Times*, February 8, 1939.

1940, Sinclair Oil and the Mexican government agreed to \$8 million in compensation and 20 million barrels sold at a 25¢ per barrel discount off market prices.[67]

Negotiations continued until 1941, when Washington imposed a settlement. After five months, a two-person committee consisting of trained engineers Morris Cook and Manuel Zevada presented their proposal on April 17, 1942. The Mexican government immediately credited \$9 million to the United States. The two governments approved the payment schedule for the rest of the compensation in September 1943. Ultimately, the compensation payments made by the Mexican government exceeded the agreed upon amount by almost \$6 million.[68]

TABLES 9 AND 10 AROUND HERE

Did the American companies receive fair compensation? It is possible to compute the price Jersey Standard paid to acquire Mexican Petroleum in 1932.[69] Jersey Standard purchased the Pan-American Foreign Corporation with a series of payments totaling \$47.9 million in cash and 1,778,973 in Jersey Standard shares. Pan-American owned 97% of Mexican Petroleum, which was traded separately on the NYSE. At market value, Mexican Petroleum made up 21% of Pan-American.[70] Jersey Standard's shares were valued at \$26.13 at the time of the deal: both the cash and shares were delivered in four annual payments. The discounted 1932 value of the deal (using the interest rate on corporate debt) came to 21% × 97.3% × 96% × (\$44.3m in cash + \$43.0 mil-

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[67] Jayne, *Oil*, p. 116.

[68] Petróleos de México, "Rendición."

[69] Jersey Standard first entered the Mexican market when it purchased the Transcontinental Petroleum Company for \$2.5 million in 1917. Transcontinental production declined preciptitously after 1923. It fell from 21.4m barrels in 1923 to 1.7m in 1930. Transcontinental then basically exited the Mexican market, closing its Tampico refinery and transferring its remaining production and transportation facilities to Mexican Petroleum. Ironically, Jersey Standard would buy back the assets that remained when it bought Mexican Petroleum in 1932. See Brown, *Oil and Revolution*, pp. 152, 160-161, and Brown, "Foreign Oil Companies," p. 372.

[70] *Wall Street Journal*, "N. J. Standard '32 Net 1c a Share," May 19, 1933.

lion in shares) = $17.5 million.[71] Adjusted for inflation, that figure becomes $17.9 million in 1938 dollars, and adding in the value of the outstanding shares bought at par in 1935 raises the total price that Jersey Standard paid for its Mexican assets to $19.2 million. (See Table 11.)

TABLE 11 AROUND HERE

It is unlikely that Jersey Standard's Mexican assets rose in value between 1932 and 1938. First, Mexican Petroleum paid no dividends after 1932, including the 1936-38 period during which it was delisted but organized as a separate subsidiary. Second, the subsidiary consistently lost money in accounting terms, save a brief moment in the black in 1935. It is possible that Jersey Standard used transfer pricing to extract value, but that begs the question of why the company would transfer income from a jurisdiction with no corporate income taxes to one with a 19% rate on all corporate income above $25,000.[72] Third, the fields controlled by the American companies (most of which were owned by Mexican Petroleum) continued to decline after 1938, *unlike the Poza Rica fields seized from Mexican Eagle*. (See Figure 6.)

FIGURE 6 AROUND HERE

Did the Mexican government fairly compensate Mexican Eagle? There are reasons to believe that it might not have. First, the U.K. had few levers to use against Mexico beyond the oil boycott. Moreover, once London imposed the embargo, diplomatic pressures made it difficult to lift. The Venezuelan ambassador to Caracas reported that the government there would be "most disturbed if they had any reason to believe that [the U.K.] might resume oil buying in

[71] The interest rate on long-term corporate bonds was 5.1%. Officer, "Interest Rate."
[72] In 1938, U.S. corporate tax brackets ran as follows: $0-$5,000, 12.5%; $5,001-$15,000, 14%; $15,001-$25,000, 16%, and 19% for all income over $25,000. See Taylor, "Tax Brackets," p. 287.

Mexico to the detriment of Venezuela."[73] London feared that an angry Venezuela might be tempted to try "squeezing us over the condition on which we purchase their oil."[74] Britain was sufficiently concerned enough about Iran that it agreed to make extra royalty payments of $6.6 million in 1939 and $17.7 million in 1940 and 1941.[75] Foreign Secretary Anthony Eden was not happy with the situation — "I do not like giving the Shah and Venezuela a veto on our relations with anybody" — but once Britain accidently benefitted Venezuela and Iran by shutting Mexican oil out of its market, it could not make any moves towards compromise without risking its relations with those governments.[76] Under American pressure, the U.K. reopened relations with Mexico in 1941, but did not lift the embargo. Charles Bateman, the new British minister to Mexico City, privately wrote that it would be impossible (he believed) for the Mexican government to make a better offer to a British company than it made to American ones.[77]

Bateman turned out to be wrong, because he did not count on the changing relationship between Britain and the United States. Between 1938 and 1945 the U.K. was transformed from a potential U.S. rival to an important junior partner. Moreover, it was a junior partner in desperate need of foreign exchange. Mexico, in turn, needed U.S. capital to expand oil production. In 1943, it negotiated a $10 million loan (₱48.5 million) from the U.S. Export-Import Bank for the construction of a new refinery at Azcapotzalco and production facilities at Poza Rica. In 1946, it began negotiations $150 million in new credits. The U.S. tacitly agreed to a request from London

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[73] Gainer to Foreign Office, 1/17/41, FO (Foreign Office) 371 26061 [A364/47/26], Public Record Office.
[74] Scott, Minute, 5/12/41, FO (Foreign Office) 371 26062 [A3341/47/26], Public Record Office, London.
[75] Jayne, *Oil*, p, 167.
[76] Eden, Minute, 1/15/41, FO (Foreign Office) 371 26061 [A218/47/26], Public Record Office, London.
[77] Bateman to Foreign Office, 1/23/43, FO (Foreign Office) 371 33980 [A930/113/26], Public Record Office.

to refrain from extending new loans to Mexico pending a settlement.[78] The U.S. then signaled Antonio Bermúdez, Mexico's chief negotiator, that a rapid settlement of outstanding British claims was the only way to receive the credit the company needed.[79] The two sides settled for $81.5 million. Payments began in 1948, and totaled $132.8 million through 1962.

Mexican accounts portrayed the settlement as a great nationalist triumph. Historians have generally agreed with that assessment. Lorenzo Meyer wrote, "The way in which *El Águila* was compensated meant, among other things, that Mexico did not pay the full value of the oil deposits claimed as its own by the company. In fact, by compensating only a third of total property value … the last vestiges of the Calles-Morrow agreement were destroyed and the original spirit of Paragraph 4 of Article 27 of the 1917 Constitution at last came into effect."[80] Sadly for the nationalist view, the data indicate that Mexican Eagle ran away with the store. The 1938 NPV of the payments came to $82.6 million. The postwar inflation in the U.S. drove the 1938 NPV of the deal down to $43.6 million, but Mexican Eagle's market capitalization in 1936, right before the outbreak of labor unrest, was only $12.2 million. The book value of the company's assets came to $16.5 million. Considering that the settlement came to almost five times the latter amount, it would be hard to argue that the company was *undercompensated* for its properties.

Winners and losers in Mexico

If the oil industry was in decline, and U.S. pressure forced Mexico to fairly compensate the companies, then the nationalization should not have produced windfall rents for the Mexican

[78] Meyer, "Great Britain," p. 164.
[79] Bermúdez, *National Petroleum Industry*, p. 177.
[80] Meyer, "Great Britain," p. 169.

government. At first glance, the evidence does not appear to be consistent with the above hypothesis: government revenue from oil increased significantly after nationalization. (See Figure 7.) Most of that increase, however, came from higher revenues from the gasoline excise tax, which the government hiked from 8 centavos to 9 centavos in 1940, and then again to 10 centavos in 1946.[81] In the first eight years after nationalization, only in 1941 did real government revenues from the oil industry (other than excise taxes) exceed pre-nationalization levels. (In 1940, Pemex's poor financial situation forced the government to grant the company a subsidy of ₱60 million.[82]) The industry only began to produce more for the government after loans from the U.S. Export-Income Bank allowed Pemex to expand production from the Poza Rica fields. (See Figure 6.) One might argue that rising excise tax revenues were a result of the British boycott of Mexican oil (see Figure 5), but that would be an odd benefit to attribute to the expropriation.

FIGURE 7 AROUND HERE

Did the oil workers gain? The government rejected union demands to directly manage the industry.[83] (Worker control was not unprecedented in Mexico: the unions managed the national railroads.) Wages rose slightly, and the work week fell from 44 hours to 40, but management refused to fully implement the December 1937 labor award. In January 1940, the unions asked that it be fully implemented. Vicente Cortés, Pemex's general manager, replied by accusing the workers of lax discipline and "removing" company equipment. President Cárdenas called on workers to allow management to suspend the labor award "until such time as the industry

[81] Powell, *Mexican Petroleum*, p. 165.
[82] Powell, *Mexican Petroleum*, p. 130.
[83] Powell, *Mexican Petroleum*, pp. 128-29.

could pay off the indemnification and modernize its equipment."[84] A labor ruling on November 28, 1940, allowed management to fire workers hired after March 1938 and reduce the wages of workers earning over ₱700 per month.[85] Nominal wages grew, but continuing inflation eroded the gains. By 1944, real compensation was little different than it had been in 1937. (See Table 12.)

TABLE 12 AROUND HERE

Conclusion

The Mexican oil expropriation of 1938 is generally viewed as the harbinger of two defining characteristics of the modern age. First, the end of empire. The argument runs as follows: United States chose not to employ all elements of its national power in defense of its economic interests. Rather, it respected the rights of a fellow sovereign nation to control its own economic policies. Second, resource nationalism: the conventional view argues that Mexico established the first of the great national oil companies that would come to dominate the world's energy scene, seizing control of a large-scale source of rents that it could use to develop the country … and in turn usher in an era of weakened property rights across what would become known as the Third World.

Like most stereotypes, there is a core of truth to the above characterization. The Roosevelt Administration *was* hesitant to intervene against Mexico. The Mexican government *did* establish the first of the great national oil companies. But beyond that, the actual historical record diverges substantially from the accepted view. The U.S. government ultimately intervened to defend the property rights of American (and allied) companies. The Mexican government, in turn,

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[84] Powell, *Mexican Petroleum*, pp. 130-32.
[85] Powell, *Mexican Petroleum*, p. 139.

compensated the companies for their properties at more than their market value. The nationalization itself was the product of an out-of-control labor dispute, rather than a grand plan, and the companies were not particularly profitable. Neither the Mexican government nor the oil workers benefitted particularly much from the nationalization.

The expropriation of 1938 took place in a context rather different from today's, but not for the reasons that historians believe. Rather, the key difference between the environment of the 1930s and today is that in the 1930s, domestic courts still refused to use their authority against foreign governments. Today, that is no longer the case. Modern versions of 1938 play out differently not for reasons of ideology or relative power, but for an accumulation of small deliberate changes that have judicialized such disputes. 1938 was not the harbinger of a new age; rather, it was one of the last gasps of an old one.

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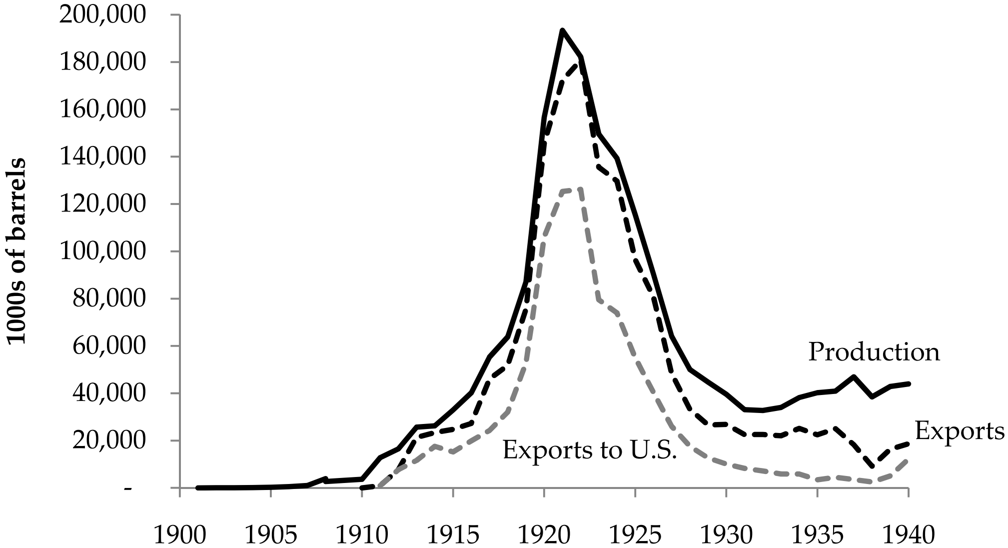
Figure 1: Mexican crude oil production and exports, 1901-40



Source: Haber, Maurer, and Razo.

Table 1: Exploratory wells, 1901-36

	Total drilled	Productive new wells	% of new wells productive	Average daily capacity, all wells (1000 bbl)	Average daily capacity, new wells (1000 bbl)
1901-16	279	174	62%	3.7	643
1917	79	43	54%	6.3	271
1918	43	28	65%	19.8	553
1919	41	31	76%	15.0	465
1920	97	62	64%	24.8	1,538
1921	317	203	64%	16.7	3,662
1922	265	158	60%	9.1	1,441
1923	467	259	55%	3.4	885
1924	699	296	42%	3.4	1,001
1925	801	298	37%	3.0	1,009
1926	808	318	39%	3.7	1,170
1927	570	204	36%	1.9	384
1928	237	96	41%	3.6	110
1929	114	32	28%	3.7	114
1930	133	71	53%	na	61
1931	87	57	66%	na	53
1932	50	31	62%	na	21
1933	222	57	26%	na	47
1934	157	35	22%	na	34
1935	144	37	26%	na	28
1936	84	29	35%	na	31

Source: Haber, Maurer, and Razo.

Table 2: Index of real value of total assets, by company, 1911-37 (1922 = 100)

	El Águila	Mexican Petroleum	Mexican Seaboard	Mexico-Pánuco	Penn-Mex
1911	89	106			
1912					
1913	188	119			
1914	214	133			
1915	203	140			
1916	162	123			
1917	119	103			
1918	96	105			
1919	91	89			80
1920	80	85			78
1921	100	100	100	100	100
1922	172	118	128	107	106
1923	183	124	130	100	102
1924	166	116	143	101	105
1925	145	123	176	154	
1926	128	146	155	174	
1927	109	118	138	285	
1928	96	112	124	282	
1929	92	92	131	361	
1930	98	85	132	475	115
1931	106	90	109	318	117
1932	119	82	123		5
1933	141	77	127		5
1934	168	67	123		5
1935	188	65	123		5
1936	172		124		5
1937	147		113		5
1938			85		

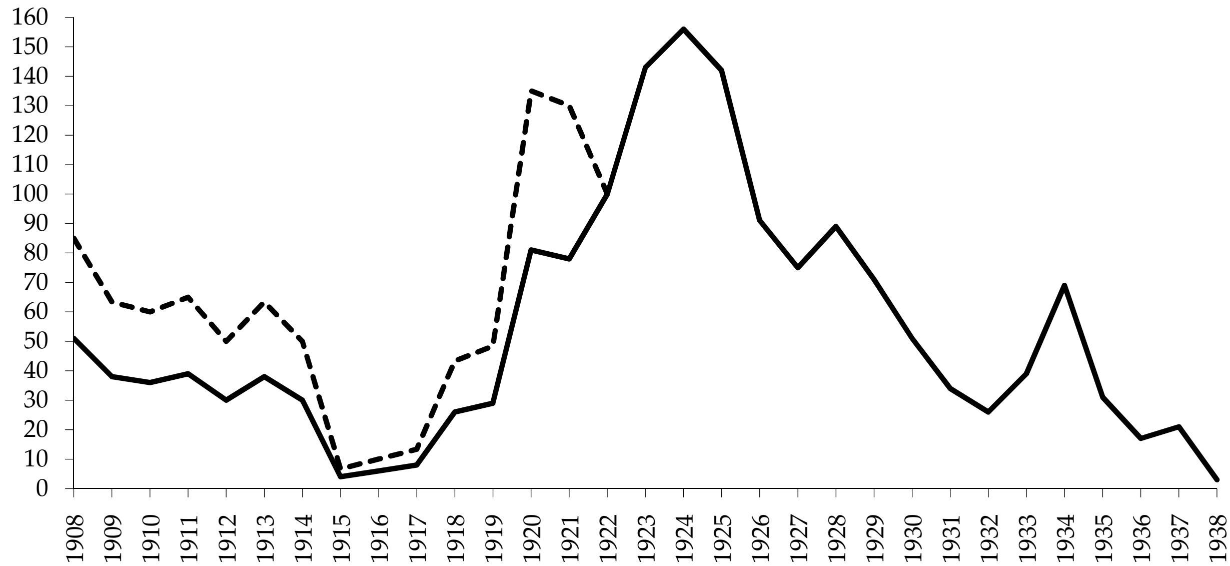
Source: Estimated from balance sheets in Moody's Manual of Investments, various years.

Table 3: Nominal and real value of investment in the Mexican oil industry, 1912-36

	Nominal (m)	2009 dollars (m)
1912	$ 175	$ 2,958
1922	$ 512	$ 5,432
1924	$ 540	$ 5,619
1928	$ 422	$ 4,343
1931	$ 313	$ 3,722
1933	$ 272	$ 3,780
1936	$ 126	$ 1,615

Sources: 1912 from Díaz Dufoo, *La cuestión del petróleo* (1922), p. 102. 1922 is an estimate produced by Foreign Minister Alberto Pani and cited in Standard Oil of New Jersey, *Present status of the Mexican oil "expropriations"* (1940), p. 4. 1924 from *Informes que rinde al H. Congreso de la Union el C Presidente constitucional de los Estados Unidos Mexicanos durante el periodo de 1921 a 1924*, p. 83. 1928 from Secretaria de Industria, Comercio y Trabajo, *La industria, el comercio y el trabajo en Mexico durante la gestión administrativa del señor Gral. Plutarco Elías Calles, Tomo I* (1928), pp. 435-56. 1931 from Mexican Oil Output," *Wall Street Journal*, p. 2, Oct 26, 1932. 1933 from Antonio Gomez Robledo, *The Bucareli agreements and international law* (UNAM: 1940), p. 97. 1936 estimates of capital investment ($96 million, nominal) from U.S. Tariff Commission, *Mining and manufacturing industries in Mexico* (1946), p. 51, and land values (108 million pesos, nominal) from "Mexican Oil Output," *Wall Street Journal*, p. 2, Oct 26, 1932, and Rene Marchand, *L'effort democratique du Mexique* (Fustier, Paris: 1938), p. 72. All figures adjusted to 2009 levels using the U.S. GDP deflator.

Figure 2: Real value of petroleum machinery exports to Mexico, 1921 = 100



Note: Prior to 1922, the U.S. Department of Commerce did not disaggregate petroleum machines from mining machines. The dashed line assumes that all oil and mining imports before 1921 consisted of petroleum equipment or pipes. The solid line assumes that the ratio of oil equipment expenditures to oil and mining equipment expenditures in 1908-21 was the same as it was in 1922 and 1923; roughly 60 percent of total mining and petroleum spending. A figure of 60% is consistent with an observation about the ratio in the month of August 1919, in which oil equipment accounted for 67 percent of the total. *Engineering and Mining Journal*, October 11, 1919, p. 623.
Source: U.S. Department of Commerce, *Foreign commerce and navigation of the United States*, various.

Table 4: Real share price index, adjusted for splits, 1921 = 100

	Mexican Eagle	Mexican Petroleum	Penn-Mex	Mexican Seaboard	Standard Oil of N.J.	Sinclair Consolidated	Texas Company
1912		87			82		86
1913		54			71		99
1914	59	66			79		104
1915	42	132	525		106	217	180
1916	37	358	408		79	301	146
1917	43	213	297		69	117	62
1918	47	105	266		70	145	73
1919	80	126	271		71	138	86
1920	103	82	133		55	63	60
1921	100	100	100	100	100	100	100
1922	70	250	85	47	89	101	92
1923	34		224	42	38	119	84
1924	32	159	115	43	20	77	87
1925	37	188	89	41	22	73	82
1926	36		92	23	21	84	114
1927	31	214	177	189	23	195	136
1928	30	267	164	15	30	96	136
1929		205		5	36	64	113
1930	11	146	99	3	27	32	66
1931	10	98	68	2	18	19	28

	Mexican Eagle	Mexican Petroleum	Penn-Mex	Mexican Seaboard	Standard Oil of N.J.	Sinclair Consolidated	Texas Company
1932	10	72	43	7	22	19	38
1933	19	79	20	11	34	37	66
1934	12	72	8	9	30	26	54
1935	7	89	11	13	35	31	75
1936	7		9	16	46	51	137
1937			7	7	29	26	94
1938			1	8	35	27	119

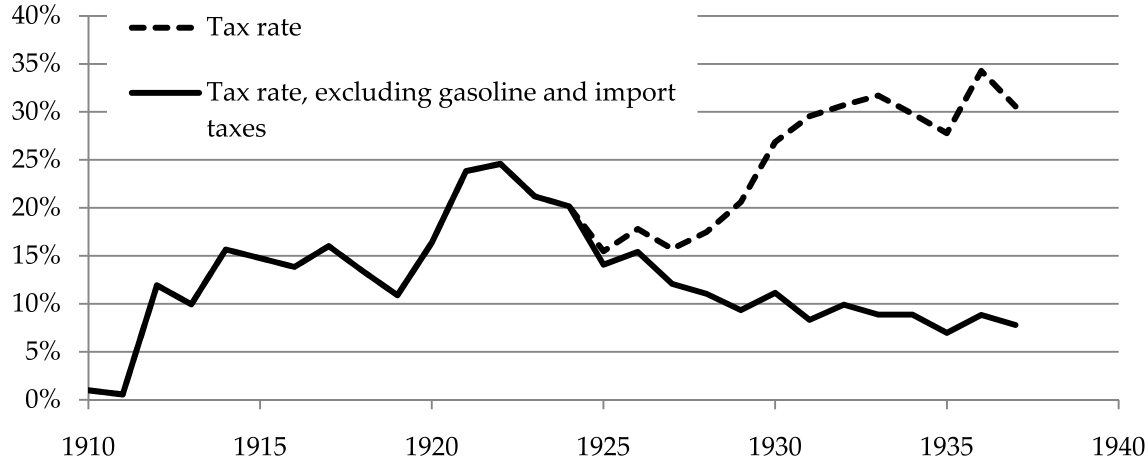
Source: 1924 and 1925 Mexican Petroleum from *Moody's*. It is the annual average. 1921 Mexican Seaboard from Moody's. El Águila data from De la Fuente, p. 98, *Moody's*, and the *Times of London*. El Águila share prices were converted to dollars at the market exchange rate and deflated using the U.S. producer price index. 1915-35 Penn-Mex from the *Wall Street Journal*, and *Moody's* thereafter. Other data is from the *Wall Street Journal* and Wharton Research Data Services, http://wrds-web.wharton.upenn.edu.

Table 5: Return on assets, Mexican oil companies, 1921-37

	Weighted average	El Águila	Mexican Petro-leum	Sinclair-Pierce	Califor-nia Stan-dard	Imperio	Mexican Seaboard	Stanford	Penn-Mex	Agwi	Consol-idated
1921	11%	9%	12%				34%		2%		
1922	15%	8%	22%				53%		-7%		
1923	6%	2%	9%				5%		6%		
1924	3%	2%	3%				33%		5%		
1925	11%	2%	16%				22%				
1926	12%	2%	18%				16%				
1927	6%	2%	8%				4%				
1928	5%	0%	8%				0%				
1929	7%	7%	7%				2%				
1930	4%	5%	3%				7%		4%		
1931	0%	-1%	0%				10%		0%		
1932	-4%	2%	-9%				7%		0%		
1933	-2%	5%	-7%				10%				
1934	3%	7%	-2%	3%	3%	16%	8%	1%	5%	29%	4%
1935	4%	7%	0%	1%	6%	25%	7%	13%	2%	18%	2%
1936	3%	8%	-1%	-5%	0%	18%	7%	11%	1%	22%	-3%
1937	5%	9%	-1%				8%				

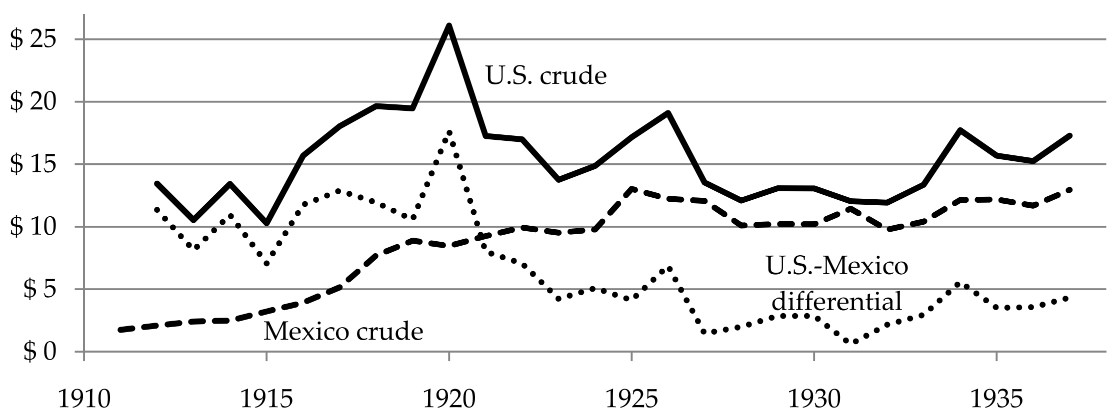
Source: Annual reports of El Águila, Pan-American Foreign, Standard Oil of New Jersey, and Mexican Petroleum; *Moody's* for Mexican Seaboard and Penn-Mex, *Mexico's Oil* for the other companies, and Mexican Petroleum in 1934-36. Author's estimate for 1937 using production and price data from Standard Oil of New Jersey.

Figure 3: Taxes and royalties as % of the gross value of crude production, Mexico, 1910-37



Source: Haber, Maurer, Razo, "When the Law Does Not Matter," JEH March 2003, p. 10; Luz María Uhthoff, "Fiscalidad y Petróleo, 1912-1938" ponencia presentada en el Segundo Congreso de Historia Económica, Asociación Mexicana de Historia Económica, AMHE, octubre 2004; and Wendell Gordon, The Expropriation of Foreign-Owned Property in Mexico, p, 80.

Figure 4: Real crude oil prices per barrel, 1911-40, 2009 dollars



Source: Mexican data from Haber, Maurer, Razo, "When the Law Does Not Matter," JEH March 2003, p. 10. US data, 1911-12, Statistical Abstract of the United States, 1937, p. 311, imported oil only. 1913-29, Haber, Maurer, Razo, p. 10. 1930-37, New York spot price from Mexico's Oil, pp. 74-75 and 132. The U.S. price is for light crude, which made up 80.4% of Mexican crude production in 1936.

Table 6: Union demands, dollars

	Government estimate	Company estimate
Wage increases	$ 2,265,492	$ 3,438,506
Overtime	$ 333,431	$ 993,148
Holidays	$ 92,496	$ 311,434
Vacations	$ 334,139	$ 428,145
Savings funds	$ 636,077	$ 902,370
Medical service	$ 277,778	$ 463,512
Housing benefits	$ 901,217	$ 1,115,105
Other	$ 2,474,024	$ 3,097,312
TOTAL	$ 7,314,654	$ 10,749,533

Source: Wendell Gordon, *The Expropriation of Foreign-Owned Property in Mexico* (American Council on Public Affairs, Washington, D.C.: 1941), p. 112.

Table 7: Oil company profits, million dollars, 1936

	Profits		Cash flow	
	Gov't estimate	Company estimate	Gov't estimate	Company estimate
Aguila	$11.9	$ 3.9	$13.2	$ 5.2
Mexican Petroleum	$ 1.9	($ 0.8)	$ 2.7	($ 0.0)
Pierce-Sinclair	$ 0.6	($0.2)	$ 1.1	$ 0.3
California Standard	$ 0.1	($0.0)	$ 0.5	$ 0.4
Agwi	$ 0.2	$ 0.1	$ 0.2	$ 0.1
Penn-Mex	$ 0.0	$ 0.1	$ 0.0	$ 0.1
Stanford	$ 0.1	$ 0.1	$ 0.2	$ 0.2
Richmond	$ 0.0	$ 0.0	$ 0.0	$ 0.0
Imperial	$ 0.1	$ 0.1	$ 0.1	$ 0.1
Cia de Gas y Combustible	$ 0.3	$ 0.3	$ 0.3	$ 0.3
Sabalo	$ 0.1	$ 0.1	$ 0.1	$ 0.1

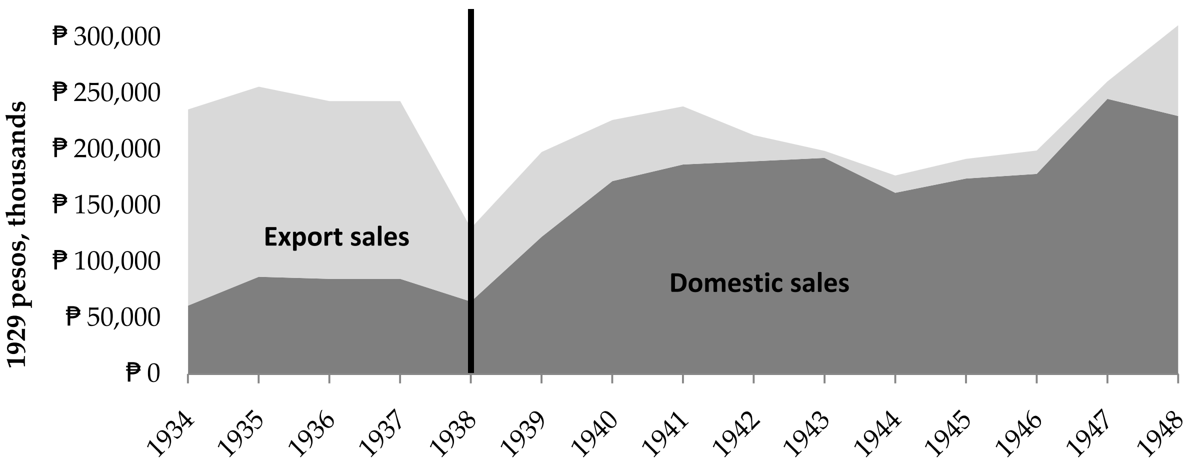
Source: Mexico's oil: a compilation of official documents in the conflict of economic order in the petroleum industry, with an introduction summarizing its causes and consequences (Government of Mexico, Mexico City: 1940), pp. 293-95, 317-19, 331-33, 347-49, 365-67, 381-84, 390-92, and 433; *Moody's Manual of Investments*, various.

Table 8: The burden of the labor settlement

	Percent of cash flow	Percent of profits
Low	39%	47%
Middle	57%	70%
High	153%	288%

Source: Tables 6 and 7.

Figure 5: Domestic and export sales of Mexican petroleum products, 1934-49



Source: Export sales from from J. Richard Powell, *The Mexican Petroleum Industry* (UC Press, Berkeley: 1956), p. 118. Domestic sales, 1934-36, from Mexico's oil: a compilation of official documents in the conflict of economic order in the petroleum industry, with an introduction summarizing its causes and consequences (Government of Mexico, Mexico City: 1940), pp. 293-95, 317-19, 331-33, 347-49, 365-67, 381-84, 390-92, and 433. Domestic sales, 1938-48, from Richard Powell, *The Mexican Petroleum Industry* (UC Press, Berkeley: 1956), Appendix Table 17.

Table 9: 1942 Settlement

	Nominal compensation, according to the 1941 agreement	1938 NPV,adjusting for inflation and including additional payments
Standard Oil of NJ	$ 18,391,641	$19,371,222
Standard Oil of CA (Socal)	$ 3,589,158	$3,780,325
Conoco	$ 630,151	$663,714
Sabalo	$ 897,671	$945,483
Seaboard	$ 487,370	$513,328
	$ 23,995,991	$ 25,274,072

Note: Compensation was valued by converting all payments into 1938 dollars using the U.S. GDP deflator and discounting them back to 1938 using the 3.2% rate at which the U.S. government lent to Mexico in 1943. (This rate was approximately equal to 3.1% rate on 10-year corporate bonds in the United States.) The second column assumes that the additional payments were divided up among the receiving corporations in proportion to their share of the original deal.

Source: "Compensation for Petroleum Properties Expropriated in Mexico," *The Department of State Bulletin*, Vol 6, April 18, 1942, p. 351, and Table 10.

Table 10: Compensation payments by the Mexican government, nominal dollars

	Payments to U.S. companies	Payments to U.S. companies, ex-Sinclair	Payments to El Aguila
1940	$ 2,750,000		
1941	$ 3,293,827		
1942	$ 12,600,000	$ 9,000,000	
1943	$ 3,796,391	$ 3,796,391	
1944	$ 4,085,327	$ 4,085,327	
1945	$ 4,085,327	$ 4,085,327	
1946	$ 4,085,327	$ 4,085,327	
1947	$ 4,085,327	$ 4,085,327	
1948	$ 0	$ 0	$ 9,536,990
1949	$ 174,765	$ 174,765	$ 9,383,531
1950	$ 210,361	$ 210,361	$ 8,689,258
1951	$ 216,361	$ 216,361	$ 8,689,258
1952	$ 222,361	$ 222,361	$ 8,689,258
1953	$ 228,361	$ 228,361	$ 8,689,258
1954			$ 9,578,106
1955			$ 8,689,258
1956			$ 8,689,258
1957			$ 8,689,258
1958			$ 8,689,258
1959			$ 8,689,258
1960			$ 8,689,258
1961			$ 8,689,258
1962			$ 8,689,258
TOTAL	$ 39,833,736	$ 30,189,909	$ 132,769,721

Source: Pemex, "Rendicion de la deuda petrolera en pesos M.N." *El Petroleo*, Mexico 1970, p. 174. Payments converted to dollars at the prevailing market exchange rate.

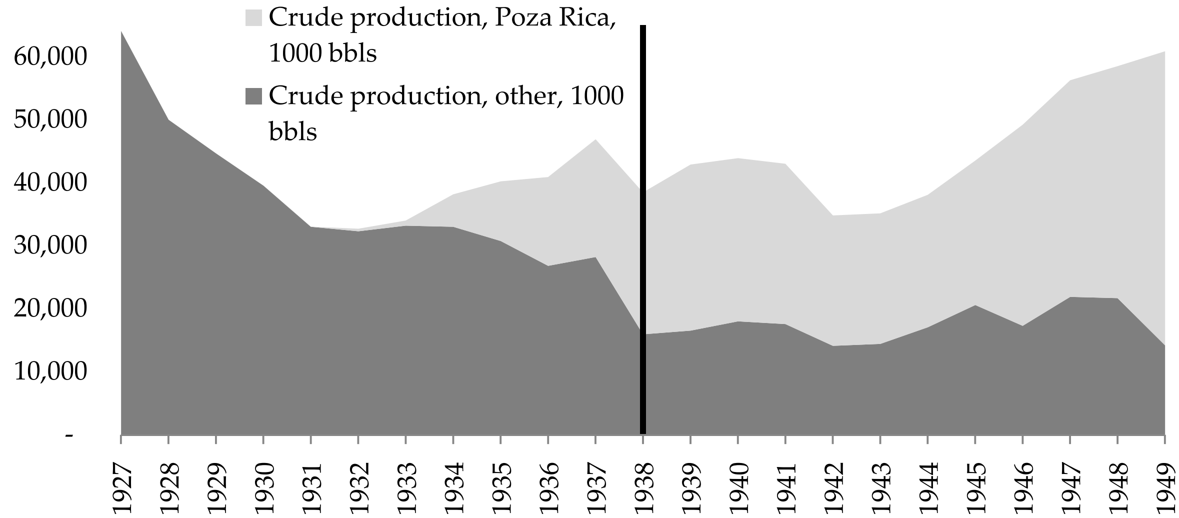
Table 11: Market value and compensation for the two largest oil companies, 1938 net present value adjusted for inflation

	Market value	Compensation
Mexican Petroleum	$ 19,188,049	$ 19,371,222
Mexican Eagle	$ 12,233,340	$ 43,552,824

Note: Compensation was valued by converting all payments into 1938 dollars using the U.S. GDP deflator and discounting them back to 1938 using the 3.2% rate at which the U.S. government lent to Mexico in 1943. (This rate was approximately equal to 3.1% rate on 10-year corporate bonds in the United States.)

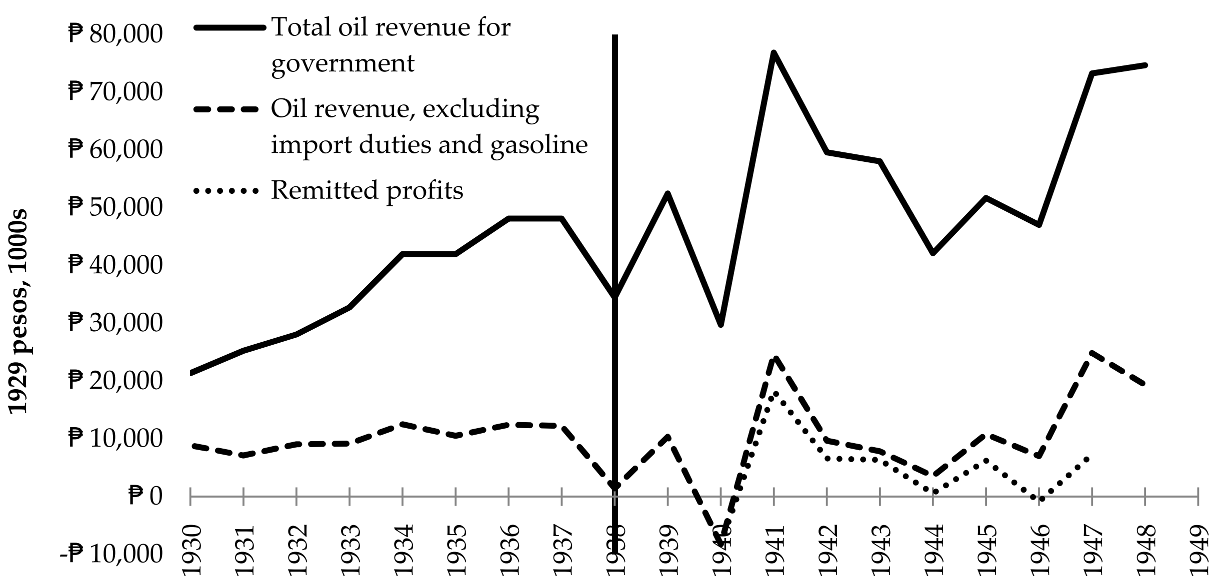
Source: See text and Table 8.

Figure 6: Mexican production, by field, 1927-49



Source: J. Richard Powell, *The Mexican Petroleum Industry*, 1938-50 (University of California Press, 1956), p. 56.

Figure 7: Government revenues from the oil industry, 1930-48



Sources: Antonio Bermudez, *The Mexican National Petroleum Industry* (Stanford, 1963), p. 258; J. Richard Powell, *The Mexican Petroleum Industry*, 1938-50 (University of California Press, 1956), p. 165 and Appendix Table 23; and Luz María Uhthoff, "Fiscalidad y Petróleo, 1912-1938" ponencia presentada en el Segundo Congreso de Historia Económica, Asociación Mexicana de Historia Económica, AMHE, October 2004.

Table 12: Labor compensation in the Mexican oil industry, 1937-46

	Payroll	Average annual labor cost	Real annual labor cost, 1929 pesos	Real labor cost, adjusted for work hours
1937	15,929	₱ 3,500	₱ 3,067	₱ 3,067
1938	17,600	₱ 3,902	₱ 3,273	₱ 3,601
1939	23,073	₱ 4,237	₱ 3,458	₱ 3,804
1940	21,940	₱ 4,556	₱ 3,701	₱ 4,071
1941	19,762	₱ 4,855	₱ 3,716	₱ 3,941
1942	20,571	₱ 5,033	₱ 3,484	₱ 3,695
1943	21,235	₱ 5,111	₱ 2,949	₱ 3,128
1944	22,867	₱ 6,461	₱ 2,907	₱ 3,084
1945	25,646	₱ 7,279	₱ 3,030	₱ 3,213
1946	25,981	₱ 8,430	₱ 2,955	₱ 3,134

Source: J. Richard Powell, *The Mexican Petroleum Industry* (UC Press, Berkeley: 1956), p. 130, 153, 214-15, Appendix Table 18.